

IFW
PATENT APPLICATION NO: 10/591,428
ATTORNEY DOCKET NO: 65084.000021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number : 10/591,428 Confirmation No.: 1426
Applicant : FROHBERG *et al.*
I.A. Filing Date: : March 4, 2005
Title : PLANTS WITH INCREASED ACTIVITY OF A STARCH
PHOSPHORYLATING ENZYME
TC/Art Unit : 1638
Examiner: : *Unassigned*
Docket No. : 65084.000021
Customer No. : **21967**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. §§ 1.97 and 1.98, and in compliance with the duty of disclosure set forth in 37 C.F.R. § 1.56, Applicants are submitting the following Supplemental Information Disclosure Statement (IDS) for consideration and to be made of record herein by the U.S. Patent and Trademark Office in the above-captioned application. Consideration of the foregoing plus the prompt return of a copy of the enclosed Form PTO/SB/08A with the Examiner's initials in the left column in accordance with M.P.E.P. § 609 are respectfully requested.

Applicants respectfully point out that the submission of the listed documents in this IDS is not an admission that they are prior art or that they are material to patentability of any claims of the application. Also, the submission of this IDS is not an indication that a search has been made.

This IDS is not to be construed as a representation that a search has, or has not, been conducted. The filing of this IDS is not to be construed as admission that the information cited in the IDS is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

Applicants wish to bring to the Examiner's attention the following co-pending U.S. patent applications: U.S. Patent Application Number 10/591,419; U.S. Patent Application

Number 10/591,432; and U.S. Patent Application Number 10/591,540. An indication of consideration of the co-pending applications by the Examiner would be appreciated. Also, consideration of the foregoing plus the prompt return of a copy of the enclosed Form PTO/SB/08A with the Examiner's initials in the left column in accordance with M.P.E.P. § 609 are respectfully requested.

In accordance with 37 C.F.R. § 1.97(b), this Supplemental Information Disclosure Statement is believed to be submitted within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d); therefore, it is respectfully submitted that no fee is required for consideration of this information. However, in the event a fee is deemed necessary, the Director is authorized to charge the undersigned's **Deposit Account No. 50-0206** pursuant to 37 C.F.R. § 1.17(p).

Respectfully submitted,

HUNTON & WILLIAMS LLP

Dated: 11/9/06

By: 

Robert M. Schulman
Registration No. 31,196

Christopher J. Nichols, Ph.D.
Registration No. 55,984

Hunton & Williams LLP
Intellectual Property Department
1900 K Street, N.W. Suite 1200
Washington, DC 20006
(202) 955-1500 (telephone)
(202) 778-2201 (facsimile)

RMS/CJN:cdh



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

| | |
|-----------------------------|-----------------------|
| Application Number | 10/591,428 |
| Filing Date | March 4, 2005 |
| First Named Inventor | Claus FROHBERG |
| Art Unit | 1638 |
| Examiner Name | Unassigned |

| | | | | | |
|--------------|----------|-----------|----------|-------------------------------|---------------------|
| Sheet | 1 | of | 5 | Attorney Docket Number | 65084.000021 |
|--------------|----------|-----------|----------|-------------------------------|---------------------|

FOREIGN PATENT DOCUMENTS

| *Examiner Initial | Cite No. | FOREIGN PATENT DOCUMENT | | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | TRANSLATION | |
|----------------------|-------------|----------------------------|----------------------------------|--------------------------------|---|---|--------------------------|--------------------------|
| | | Country Code: | Number - Kind Code (if known) | | | | YES | NO |
| /BP/ | 1. | WO | 96/27674 | 09-12-1996 | Institut Fur Genbiologische Forschung Berlin GmbH | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 2. | WO | 97/11188 | 03-27-1997 | Plantec Biotechnologies GmbH | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 3. | WO | 00/77229 | 12-21-2000 | Aventis Cropscience GmbH | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 4. | WO | 02/10210 A2 | 02-07-2002 | Bayer Aktiengesellschaft | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 5. | WO | 02/22675 A2 | 03-21-2002 | Syngenta Participations AG <i>et al.</i> | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 6. | WO | 02/34923 A2 | 05-02-2002 | Aventis Cropscience GmbH | | <input type="checkbox"/> | <input type="checkbox"/> |
| | 7. | WO | 05/095632 | 10-13-2005 | FROHBERG | | <input type="checkbox"/> | <input type="checkbox"/> |

EXAMINER SIGNATURE

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | Application Number 10/591,428 | |
|---|--|--|--------------------------|---|--|
| | | | | Filing Date March 4, 2005 | |
| | | | | First Named Inventor Claus FROHBERG | |
| | | | | Art Unit 1638 | |
| | | | | Examiner Name Unassigned | |
| Sheet 2 | | of 5 | | Attorney Docket Number 65084.000021 | |
| OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS | | | | | |
| *Examiner Initials | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | TRANSLATION | | |
| | | | YES | NO | |
| /BP/ | 8. | Alonso et al.(August 1, 2003) "Genome-Wide Insertional Mutagenesis of Arabidopsis thaliana" <u>Science</u> 301: 653 - 657 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 9. | Baunsgaard et al. (2005) "A novel Isoform of Glucan, Water Dikinase Phosphorylates Pre-Phosphorylated α -glucans and is Involved in Starch Degradation in Arabidopsis." <u>The Plant Journal</u> 41: 595 - 605 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 10. | Blennow et al. (2000) "The distribution of covalently bound phosphate in the starch granule in relation to starch cristanallity." <u>International Journal of Biological Macromolecules</u> 27: 211-218 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 11. | Blennow et al. (2000) "Starch molecular structure and phosphorylation investigated by a combined chromatographic and chemometric approach." <u>Carbohydrate Polymers</u> 41: 163-174 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 12. | Blennow et al. (October 2002) "Starch phosphorylation: a new front line in starch research." <u>Trends in Plant Science</u> 7(10): 445 - 450 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 13. | Jane et al. (November/December 1996) "Phosphorus in Rice and Other Starches." <u>Cereal Foods World</u> 41(11): 827-832 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 14. | Kötting et al. (January 2005) "Identification of a Novel Enzyme Required for Starch Metabolism in Arabidopsis Leaves. The Phosphoglucan, Water Dikinase ^[w] ." <u>Plant Physiology</u> 137: 242-252 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 15. | Lorberth et al. (May 1998) "Inhibition of a starch-granule-bound protein leads to modified starch and repression of cold sweetening." <u>Nature Biotechnology</u> 16: 473-477 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | 16. | Mikkelsen et al. (2004) "Functional characterization of α -glucan, water dikinase, the starch phosphorylating enzyme." <u>Biochem. J.</u> 377: 525-532 | <input type="checkbox"/> | <input type="checkbox"/> | |
| | EXAMINER SIGNATURE | | | DATE CONSIDERED | |
| | *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | | |

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT***(use as many sheets as necessary)*

| | |
|-----------------------------|-----------------------|
| Application Number | 10/591,428 |
| Filing Date | March 4, 2005 |
| First Named Inventor | Claus FROHBURG |
| Art Unit | 1638 |
| Examiner Name | Unassigned |

| | | | | | |
|--------------|----------|-----------|----------|-------------------------------|---------------------|
| Sheet | 3 | of | 5 | Attorney Docket Number | 65084.000021 |
|--------------|----------|-----------|----------|-------------------------------|---------------------|



OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS

| *Examiner Initials | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | TRANSLATION | |
|-----------------------|-------------|--|--------------------------|--------------------------|
| | | | YES | NO |
| /BP/ | 17. | GenPept Accession No. B29959 (June 18, 1999) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 18. | GenBank Accession No. Y09533 (July 22, 2003) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 19. | GenBank Accession No. AY027522 (February 26, 2001) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 20. | GenPept Accession No. AAN93923 (December 20, 2002) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 21. | GenPept Accession No. AR236165 (December 20, 2002) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 22. | GenPept Accession No. AAR61444 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 23. | GenBank Accession No. AR400813 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> |
| | 24. | GenBank Accession No. AR400184 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> |
| ↓ | 25. | GenPept Accession No. AAR61445 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> |

EXAMINER SIGNATURE

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| Substitute for form 1449A/PTO <div style="text-align: center;"> INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> </div> | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td>10/591,428</td> </tr> <tr> <td>Filing Date</td> <td>March 4, 2005</td> </tr> <tr> <td>First Named Inventor</td> <td>Claus FROHBURG</td> </tr> <tr> <td>Art Unit</td> <td>1638</td> </tr> <tr> <td>Examiner Name</td> <td>Unassigned</td> </tr> </table> | | Application Number | 10/591,428 | Filing Date | March 4, 2005 | First Named Inventor | Claus FROHBURG | Art Unit | 1638 | Examiner Name | Unassigned |
|---|-----------------------|---|--------------------------|--|-------------------------------|---------------------|----------------------|-----------------------------|-----------------------|-----------------|-------------|----------------------|-------------------|
| Application Number | 10/591,428 | | | | | | | | | | | | |
| Filing Date | March 4, 2005 | | | | | | | | | | | | |
| First Named Inventor | Claus FROHBURG | | | | | | | | | | | | |
| Art Unit | 1638 | | | | | | | | | | | | |
| Examiner Name | Unassigned | | | | | | | | | | | | |
| Sheet | 4 | of | 5 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Attorney Docket Number</td> <td>65084.000021</td> </tr> </table> | Attorney Docket Number | 65084.000021 | | | | | | | |
| Attorney Docket Number | 65084.000021 | | | | | | | | | | | | |
| OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS | | | | | | | | | | | | | |
| *Examiner Initials | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | TRANSLATION | | | | | | | | | | |
| | | | YES | NO | | | | | | | | | |
| /BP/ | 26. | GenBank Accession No. AR400815 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
|  | 27. | GenPept Accession No. AAR61446 (December 18, 2003) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 28. | GenBank Accession No. AY094062 (July 23, 2003) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 29. | GenBank Accession No. AF312027 (August 24, 2001) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 30. | GenBank Accession No. AY747068 (March 1, 2005) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 31. | GenPept Accession No. S01446 (July 21, 2000) | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 32. | Ritte et al. (2003) "Determination of the starch-phosphorylating enzyme activity in plant extracts." <u>Planta</u> 216 (5): 798-801 | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| | 33. | Ritte et al. (May 14, 2002) "The starch-related R1 protein is an α -glucan, water dikinase." <u>PNAS</u> 99 (10): 7166-7171 | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
|  | 34. | Ritte et al. (2000) "Compartmentation of the Starch-Related R1 Protein in Higher Plants." <u>Starch/Stärke</u> 52 : 179 - 185 | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | |
| EXAMINER SIGNATURE | | | DATE CONSIDERED | | | | | | | | | | |
| <p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p> | | | | | | | | | | | | | |

| Substitute for form 1449A/PTO | | | | Application Number 10/591,428 | | |
|---|-------------|--|----------|---|--------------------------|--------------------------|
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | Filing Date March 4, 2005 | | |
| | | | | First Named Inventor Claus FROHBERG | | |
| | | | | Art Unit 1638 | | |
| | | | | Examiner Name Unassigned | | |
| Sheet | 5 | of | 5 | Attorney Docket Number 65084.000021 | | |
| OTHER DOCUMENTS - NON-PATENT LITERATURE DOCUMENTS | | | | | | |
| *Examiner Initials | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | | | TRANSLATION | |
| | | | | | YES | NO |
| /BP/ | 35. | Sitohy et al. (2000) "Optimizing the Conditions for Starch Dry Phosphorylation with Sodium Mono-and Dihydrogen Orthophosphate under Heat and Vacuum." <u>Starch/Stärke</u> 52 (4): 95 - 100 | | | <input type="checkbox"/> | <input type="checkbox"/> |
| ↓ | 36. | Tabata et al. (1971) "Studies on Starch Phosphate." <u>Starch/Stärke</u> 23 : 267-272 | | | <input type="checkbox"/> | <input type="checkbox"/> |
| ↓ | 37. | UniProtKB/Swiss-Prot entry Q6ZY51 (June 13, 2006) | | | <input type="checkbox"/> | <input type="checkbox"/> |
| ↓ | 38. | UniProtKB/TrEMBL entry Q84T18 (June 1, 2003) | | | <input type="checkbox"/> | <input type="checkbox"/> |
| ↓ | 39. | Yu et. al. (August 2001) "The Arabidopsis sex1 Mutant is Defective in the R1 Protein, a General Regulator of Starch Degradation in Plants, and Not in the Chloroplast Hexose Transporter." <u>The Plant Cell</u> 13 : 1907 - 1918 | | | <input type="checkbox"/> | <input type="checkbox"/> |
| EXAMINER SIGNATURE /Brent Page/ | | | | DATE CONSIDERED 11/14/2008 | | |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | | | | |